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ABSTRACT

Many children who are born into poverty face increased challenges. But different factors can ameliorate such risks and some findings on resilience and protective factors are reported in this paper. The data are based on the Parent-Child Project, a 22-year study of high-risk children. The focus is on protective factors identified in the first three years of life. Emphasis is placed on the role of mother-infant attachment and on the prevention and intervention programs that were designed to enhance the attachment relationship. Assessments of adaptation and competence were based on an organizational view of development and protective factors were identified by examining the relationship between adversity experienced by the child and later child developmental adaptation. Findings suggest that a secure attachment in infancy, along with good quality parenting, particularly emotionally responsive caregiving, and good quality parent-child relationship in the toddler and preschool period serve as major protective factors against the negative effects of various childhood adversities. The implications from these findings are that future prevention/intervention efforts with young children need to focus more on the emotional aspects of parenting young children. (RJM)

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Prevention and Implications

RISK AND RESILIENCE IN INFANTS AND YOUNG CHILDREN

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The purpose of my talk is to report briefly some of our findings on resilience and protective factors identified in the Parent-Child Project, a 22-year longitudinal study of high-risk children. I will focus on protective factors identified in the first 3 years of life and discuss their implications for prevention. I will emphasize the role of mother-infant attachment as a protective factor then describe prevention and intervention programs that were designed to enhance the attachment relationship. After reviewing the evaluation findings from attachment intervention, I will speculate on the future direction of attachment intervention and parenting programs in general.

In 1975 I began to follow a poverty sample of mothers who were pregnant with their first children. Since that time, with the help of Alan Sroufe and more recently Andy Collins, we have collected detailed and comprehensive information on child adaptation at each developmental period starting in infancy and continuing through adolescence. Our primary risk factor was poverty; however, as is the case with a poverty sample, there are a number of associated risk factors. For example, many of our mothers were: single (62% at the time of the birth of their child); young (youngest mother was 12, average age was 19); and poorly educated (40% did not finish high school). Many of the families lived in stressful, chaotic, and disorganized home environments. The incidence of child abuse and neglect in this sample was more than 15%, drug and alcohol abuse was high, and in general many of the children were in multi-problem families that in some instances were highly dysfunctional.

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The data collected over the past 22 years continue to support the risk status of the sample. Eighty percent of the children received some form of special education services in elementary school, and 18% were retained during this period (Egeland & Abery, 1991). Approximately 20% of the children in the first grade fell in the clinical range (Score >65) on teacher ratings on the Internalizing or Externalizing Scale of the Child Behavior Checklist. By age 19, 30% had dropped out of school. Based on the results of the K-SADS given at age 17.5, 46% of the children met at least one DSM-IIIR set of criteria for mental illness. Despite the large proportion of poorly functioning children, at each assessment we found some children who were functioning well above what would be predicted based on the degree of risk they experienced.

Our assessments of child adaptation and competence were based on an organizational view of development which has been described in a number of publications, especially by my co-investigator Alan Sroufe. In addition to assessment of child adaptation, we have detailed and comprehensive information on parental characteristics (e.g., IQ, depressive symptomology, parental beliefs, etc.); child characteristics (e.g., temperament during infancy, IQ at later ages); observations of mother-child interaction; family life circumstances (e.g., stressful life events, family support, relationship status); and quality of the home environment (e.g., HOME [Caldwell & Bradley, 1984]). These data were used to account for child adaptation or for deflections in developmental adaptation. The assessments began during the last trimester of the mother's pregnancy and have continued through age 19. During the first year of the child's life assessments of temperament occurred in the newborn nursery and at days 5 and 10. Interviews, testing, and observation of mother-infant interaction were conducted at 3, 6 (twice), 9, and 12 (twice) months. Assessments were conducted at 6-month intervals during the toddler and preschool period and at the end of kindergarten, first, second, third, and sixth grades in the elementary school years,

and a family observation was conducted at age 13. Individual assessments were administered at ages 16, 17.5, and 19.

I do not have time to review the data on the effects of poverty except to say that we, like many other investigators, found that poverty had a pervasively negative effect on child adaptation. Clearly, poverty is a major risk condition, and the negative effects of poverty seem to be cumulative and increase as the child gets older. Even though the majority of our high-risk children were poor functioning, a number of children have functioned in a competent fashion despite living in poverty and experiencing a variety of adversities. Some children did well academically and 28% have gone on to attend college. A number of children have been judged to be well functioning in the social and emotional areas as well. For example, 15% of the children were ranked by their teachers above the 90th percentile on peer competence and popularity compared to other children in the sixth grade classroom.

To identify protective factors, we have examined the relationship between adversity experienced by the child and later child developmental adaptation. The adversities we have examined in most detail are child maltreatment and high family stressful life events (Egeland, Carlson, & Sroufe, 1993). As expected, children who have been maltreated by a caregiver (physical abuse, physical and emotional neglect, and sexual abuse) show devastating consequences in most every area of functioning. Although all maltreated children show negative consequences, some children are functioning in a more competent fashion than others. For example, in a recent long-term follow up in adolescence of 36 children maltreated in preschool, 4 maltreated children out of the 36 did not receive a clinical diagnosis on the K-SADS diagnostic interview. Four children is not a large enough sample to study protective factors, but it is worth noting that all 4 of the non-diagnosed individuals (I don't know if we can call them resilient) who were maltreated at an early age were securely attached as infants. This suggests that an early secure attachment between mother and infant provided a

good foundation for later development and seemed to serve as a protective factor against later adversity.

We have examined the protective factors for children whose families have experienced many stressful life events (Pianta, Egeland, & Sroufe, 1990). In comparing competent to less competent children of highly stressed mothers we found competent boys of highly stressed mothers had higher intelligence and language ability, a more structured and responsive home environment, and ratings reflecting positive mother-child interaction at 42 months of age (competence defined as success in the early school years). The data suggest that competence in boys of highly stressed mothers was in part due to mothers' ability to buffer their sons from the effects of stress and to continue to provide their sons with good quality care. Like the boys, the more competent girls were more intelligent, had better language skills, and lived in more organized home environments. For girls, however, competence was most highly related to positive maternal personality characteristics. It was suggested that competence in girls may have depended upon their mothers' personal adjustment, which may have had the double benefit of buffering the daughters from the negative effects of stress and providing a role model for positive coping.

In a related study, we found that a history of early competence was a major protective factor against the adverse effects of high family stressful life events (Egeland & Kreutzer, 1991). For boys especially, a history of early competence was a strong protective factor for positive adaptation in the early school years. The early history of competence consisted of a secure attachment at 12 and 18 months and a good quality mother-child relationship observed in a set of teachings tasks at 42 months. We were struck by the importance of the early mother-infant attachment relationship in serving a crucial protective function. Our findings are consistent with others who have found that the effects of severe risk conditions are mediated by the nature of the child's early relationship and the care the child receives from the parents.

In addition to the studies of protective factors, we have examined developmental adaptation across time and found the early attachment relationship provides an important foundation for later development. Secure infants are generally more competent in preschool and school years compared to the insecure group. All of these findings are quite compelling and suggest that efforts aimed at promoting a secure attachment may have a large payoff in terms of preventing various forms of developmental maladaptation in high risk children (Sroufe, Egeland, & Carlson, in press). With my colleague Marti Erickson, we set out to develop a prevention/intervention program that focuses on a number of parenting and related issues, particularly the mother-infant attachment relationship.

Much is known from the literature about the developmental process involved in forming an attachment between infant and caregiver. There are a number of parenting factors that have been shown to directly impact the quality of parent-infant attachment. One that has received considerable attention is parental sensitivity to infant cues. A number of studies of the antecedents of attachment find parental sensitivity and responsitivity to baby's cues and behaviors during the first year of life are related to secure attachment.

Based on attachment theory and our findings as well as the research of others studying the antecedents of a secure attachment, we developed a program designed to improve the interaction and relationship between mothers and their infants (Egeland & Erickson, 1990; Egeland & Erickson, 1993). With funding from NIMH we implemented and evaluated STEEP (Steps Toward Effective Enjoyable Parenting), a preventative intervention program for high-risk mothers and their infants. STEEP is a comprehensive and intensive program consisting of home visit and group intervention for new parents beginning in the last trimester of pregnancy and continuing through the first year of the baby's life. One goal was to facilitate mother's sensitive and responsive care of the infant. To accomplish this goal we used a variety of educational,

therapeutic, and supportive strategies. For example, during home visits, we often videotaped mother and infant in a variety of naturalistic interaction situations (e.g., feeding, play, bathing). We then watched the tapes with the mother, using a careful, nonjudgmental approach designed to enhance mother's understanding of the baby and her relationship with the baby, promote perspective taking, and increase her sensitivity to the infant's cues. For example, the facilitator would ask questions such as, "What do you think your baby was feeling then?", "What is your baby telling you?". The tapes provide an excellent means for helping mother to recognize and affirm her own knowledge of her baby. This strategy also affirms the individuality of each baby, focusing on what this baby does, rather than what a "typical 3-month old" does. Videotapes also provide a good forum for helping the parent recognize and understand the reciprocity and mutual influence within the parent-child relationship. And this strategy allows the facilitator and parent to be collaborators in discovering what this baby likes and wants and how s/he lets others know.

The results of the evaluation of the prevention program were both encouraging and discouraging. In comparing the treatment group to a randomly assigned control group we found that the intervention had a positive impact on several variables associated with good parent-infant relationships. For example, the treatment group was found to have a better understanding of infants and their relationship with their infants compared to the control group. Mothers in the treatment group had lower depression and anxiety scores and were more competent in managing their daily lives. They had higher scores on the HOME which indicates that they provided a more stimulating and organized home environment. Unfortunately, the overall findings regarding the effects of the program on quality of mother-infant attachment as measured by the Strange Situation at 13 and 19 months were not significant. Needless to say, we were disappointed in not finding a significant treatment effect on the

mother-infant attachment. In an earlier publication, we have discussed possible reasons for not finding a positive effect on attachment (Egeland and Erickson, 1993).

Our non significant attachment findings are consistent with many other intervention studies that have attempted to promote infant attachment security. In 1995, van IJzendoorn reviewed existing studies and did a meta analysis of 16 attachment intervention studies. There basically are two approaches to intervention in this area: 1) to help parents become more sensitive to infant cues; 2) a mental health model to change parent's inner-working models (IWM). In practice, the attachment interventions share many elements of the two approaches. First let me briefly describe the approach involving training parents to be more sensitive to infant cues and communication. Mary Ainsworth, a pioneer in the area of attachment theory, observed that securely attached infants had parents who were sensitive to their cues. Mary developed the Strange Situation, a procedure for assessing parent-infant attachment patterns, and she developed scales for rating sensitivity to baby's communications. She defines sensitivity as the parent's ability to perceive and to interpret accurately the signals and communications implicit in her infant's behavior, and given this understanding, to respond to them appropriately and promptly. Thus the parent's sensitivity has four essential components: (a) her awareness of the signals; (b) an accurate interpretation of them; (c) an appropriate response to them; and (d) a prompt response to them. Sensitivity interventions primarily focus on helping parents to be more aware of infant signals and to more accurately interpret these signals. For example, one of the STEEP activities which I described above was for mother and intervenor to observe video tapes of interactions between mother and her infant. One purpose of this activity was to help mother become more aware of baby's cues and to better understand the meaning of those cues. STEEP and other attachment interventions seem to focus less on c) and d), the responsiveness to baby's cues.

An example of the approach focusing on enhancing parental sensitivity are the Dutch studies which used 3-4 sessions designed to help the mother become more sensitive and aware of baby's cues and communications. Van den Boom (1995) recruited mothers of infants identified as irritable and found that after the brief intervention 78% of the control infants were insecure compared to only 28% of the treatment group. These findings are quite surprising and as far as I know, they have not been replicated outside of Holland.

The mental health model to attachment intervention basically aims to change parent's inner-working models (IWM). According to attachment theory, parent's mental representations of their relationship histories with their own caregivers influence the expectations and behaviors they direct toward their infants. Bowlby (1969/1982) hypothesized that an individual builds expectations of the world, relationships, and self based upon the quality of care received in continuous experience with primary caregivers. These mental representations or "internal working models" are conceptualized as a set of cognitive and emotional rules that organize how individuals see themselves and relationships (Main, Kaplan, & Cassidy, 1985).

The mental health approach is modeled after Fraiberg et al.'s infant/mother psychotherapy in which the parent is encouraged to see her ghosts of the past relationships and understand how they may influence her perception of and interaction with her baby. STEEP, Barnard et al. (1988), and Lieberman et al. (1991) are examples of this approach. These three studies, like most American studies, did not yield positive effects for attachment.

Considering all 16 studies, including the mental health approach as well as those focusing on sensitivity, van IJzendoorn and his colleagues found an effect size for sensitivity of D=.58, which is significant. Again considering all 16 studies, the effect size for attachment was weaker, D=.17 (p=.036) and is equal to a correlation of .09. The attachment intervention findings indicate that the interventions had a positive effect on

maternal sensitivity and a small effect on attachment security. Interventions that impact sensitivity do not necessarily have a corresponding effect on attachment. Except for the Dutch studies, it appears that improving maternal sensitivity may not be enough to change the quality of attachment. The implications are that attachment interventions focusing on maternal sensitivity need to include other parenting behaviors, one of which I would argue is emotional responsitivity and involvement. I will come back to this.

The mental health approach to attachment intervention also did not have a strong effect on attachment. STEEP and the other programs I mentioned had a number of goals, however a major focus was to change the parents' mental representation or IWM. There are many possible reasons why the approach, like the intervention focusing on maternal sensitivity did not yield the desired effect. One reason is that this approach also did not have as a goal to improve emotional responsitivity. STEEP and the other mental health programs did have as one of their goals changing certain parenting behaviors, particularly maternal sensitivity.

Our intervention had a positive effect on helping parents become more aware of baby's cues, but this did not seem to lead to more appropriate emotionally responsive caregiving on the part of the parent. Before going on, let me describe what I mean by emotional responsitivity. Baby's cues require a response, and in many instances they require an emotional response. If baby is distressed, it needs to be comforted. Not by picking baby up in a mechanical fashion, but rather in an emotionally comforting and involved fashion. Emotional responsitivity is carrying out a task (e.g., feeding) in an empathic and emotionally connected fashion. A big part of emotional responsitivity is making baby feel safe, secure and wanted.

Even though the mental health interventions were concerned with emotional issues, they did not appear to focus on the emotional aspects of parenting and the parent-child relationship. These attachment interventions, like many parenting

programs in general, do not seem to have as a major goal enhancing parental "warmth," nurturance, and emotional responsitivity. Even though most attachment intervention and parenting programs do not focus directly on the emotional dimensions of parenting, the assumption seems to be that improving various parenting behaviors will result in improved nurturance and warmth. Unfortunately it doesn't seem to work out, especially for studies that have used observational procedures for assessing the emotional qualities of parenting.

For example, in a recent evaluation of New Chance, a "two generation" comprehensive intervention for AFDC mothers and their young children, intervention mothers were found to display significantly less harsh physical behavior toward their young child compared to mothers in the control group. This demonstration program was implemented in 16 sites across the country, and as part of the evaluation mothers and children were videotaped in a semistructured situation. Based on ratings from these interactions, there were no intervention vs. control differences on any of the maternal warmth and emotional responsitivity dimensions. It appears that the attachment interventions and parenting programs in general can lead to changes in parental behavior such as sensitivity or harsh punishment, but these programs do not seem to have much of an effect on parental emotional involvement and responsitivity.

I began this paper by summarizing findings on risk and protective factors from our longitudinal study of high-risk children and their families. A secure attachment in infancy along with good quality parenting, particularly emotionally responsive caregiving, and good quality parent-child relationship in the toddler and preschool period serve as major protective factors against the negative effects of various childhood adversities. Other studies of resilience find emotionally supportive caregiving to be a major protective factor. In longitudinal studies of children of depressed parents, Radke-Yarrow and Sherman (1990) have identified children they called survivors, children who demonstrate competence despite adverse relationship

and environmental factors. A key characteristic of survivors was their history of having received whatever emotional nurturance was available in the family. Musick, Stott, Spencer, Goldman, & Cohler (1987) also found emotionally responsive caregiving to be a major protective factor for young children of mentally ill parents.

The implications from these findings of risk, resilience, and protective factors and the findings from attachment intervention studies are that future prevention/intervention efforts with young children need to focus more on the emotional aspects of parenting young children. These aspects of parenting appear to be difficult to change, although there are very few programs that have been specifically designed for this purpose. Emotional involvement, warmth and responsivity are not something that can just be taught. Interventions need to assist parents in getting to a place in their own emotional lives where they feel unencumbered to express this warmth. This does not mean a personality reorganization but rather a focus on defensive issues associated with past relationships. In general, I would argue that prevention efforts focusing more on the emotional qualities of parenting would impact attachment security and appear to have potential long-term payoff for high-risk children.

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